Proposed Fond du Lac Band Water Quality Criterion for Conductivity

Background:

- On September 28, 2018, the Fond du Lac Band of northeast Minnesota proposed a conductivity criterion of 300 µS/cm to protect aquatic life, expressed as an instantaneous maximum.
- The new criterion would apply to those waters within the exterior boundary of the tribe's reservation.
- 300 µS/cm is the chronic aquatic life benchmark documented in EPA ORD's 2011 peer-reviewed report, *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*[1](EPA 2011).
    - EPA 2011 documents the relationship between increased conductivity in surface waters and impacts on aquatic life in the form of reduced populations of aquatic insects; a widely accepted indicator of the health of rivers and streams.
    - Plaintiffs in *Ohio Valley Envtl. Coal. v. Elk Run Coal Co., Inc.* claimed that defendants had violated their permit narrative WQS requirements, citing as evidence effects to aquatic life and elevated conductivity levels in receiving waters when compared to EPA's 2011 benchmark. The U.S. District Court for the Southern District of West Virginia ruled in plaintiffs' favor in a June 4, 2014 ruling, stating "…the Benchmark underwent extensive scientific review, and it is respected as good science within the relevant scientific community."
- The tribe cites two supporting documents for its proposed conductivity criterion to protect aquatic life:
    - B.L. Johnson and M.K. Johnson, *An Evaluation of a Field-Based Aquatic Benchmark for Specific Conductance (SC) in Northeast Minnesota* (Johnson and Johnson, 2015) – prepared for Water Legacy, in response to the Environmental Impact Statement public notice for a proposed mine in northeast MN (Polymet-Northmet). Johnson and Johnson, 2015 compares the ionic content and benthic invertebrate communities of streams in northeast MN to those in Appalachian streams (used to develop EPA's 2011 benchmark) and concludes that it is appropriate to apply the 300 µS/cm value to northeast MN to protect aquatic life.
    - A February 2016 memo by Susan Cormier, EPA ORD conductivity expert and primary author of the 2011 field-based methods, evaluates Johnson and Johnson 2015. EPA Region 5 requested Cormier's review to assist in the permitting process for the proposed PolyMet mine. In the memo, Cormier verifies that Johnson and Johnson 2015 appropriately applied the EPA 2011 Conductivity Benchmark method to northeast MN streams, including the appropriateness of applying 300 µS/cm to northeast MN streams. The 2016 memo provides:
        - Independent confirmation from state and federal datasets that background conductivity levels in northeast MN are less than background levels in Appalachia, supporting the conclusion that a criterion at least as stringent as the benchmark for central Appalachia (300 µS/cm) would be protective in northeast MN.
        - Independent confirmation from paired benthic invertebrate and conductivity data for northeast MN that more than 5% of genera would likely be extirpated in waters with conductivity > 300 µS/cm.
        - Confirmation that other stressors (i.e., metal contamination, habitat alteration, temperature, and nutrients) may contribute to biological effects at mine sites, however; extirpation due to conductivity would be expected to occur even if these stressors were removed.

Schedule:

- Public comment period ends December 6, 2018.
- Fond du Lac will review comments received during the public notice and consider possible revisions based on the comments received. Fond du Lac has stated that Minnesota did not raise objections to the conductivity criterion in its official comments on Fond du Lac's proposal.

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[1] U.S. EPA. A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/023F, 2011.

- Following consideration of comments, Fond du Lac is expected to complete its process of formal adoption after which Fond du Lac will submit any new or revised water quality standards to EPA for CWA 303(c) review, potentially in early 2019.

Fond du Lac's proposal and supporting documentation may be found at [HYPERLINK "http://www.fdlrez.com/RM/waterrevisedwqs.htm"].